Eastern Oyster

(Crassostrea virginica)

The eastern oyster is a bivalve mollusk found in sounds, bays, and estuaries from New Brunswick, Canada to the Gulf of Mexico. Oysters grow in the rich coastal waters of Louisiana and can be found in large groups called reefs, both in intertidal and subtidal zones. Oyster reefs form the majority of hard substrate found in Louisiana's estuaries, providing habitat many other species. Commercial harvesting of oysters in Louisiana began in the mid-1800s, and oysters are still a very important and popular economic resource today.

Spawning Season

Oysters release eggs and sperm into the water column and fertilization takes place strictly by chance to form an oyster larvae. As with many marine invertebrates, changes in water temperature stimulate spawning events. In the Gulf of Mexico this critical temperature is at or above 68 degrees Fahrenheit, typically May to November. Oysters may spawn several times during a season. The number of eggs released varies with the size and condition of the female, but it has been estimated that a female oyster discharges 10-20 million eggs per spawn and as many as 100 million eggs per spawning season.

Habitat

Oyster larvae settle at two to three weeks of age and become sessile, meaning they remain in one place for the rest of their life. The larvae settle in shallow water and attach to hard substances such as glass, concrete, rock, bits of shell, or other oysters with a cementing fluid it secrets. Oysters often settle in high densities, forming reefs which increase the hard substrate available for future settlement and provide habitat and foraging grounds to fishes, crabs, and shrimp. Being a true estuarine organism, oysters are extremely tolerant to a wide range of temperature, salinity, and dissolved oxygen conditions.

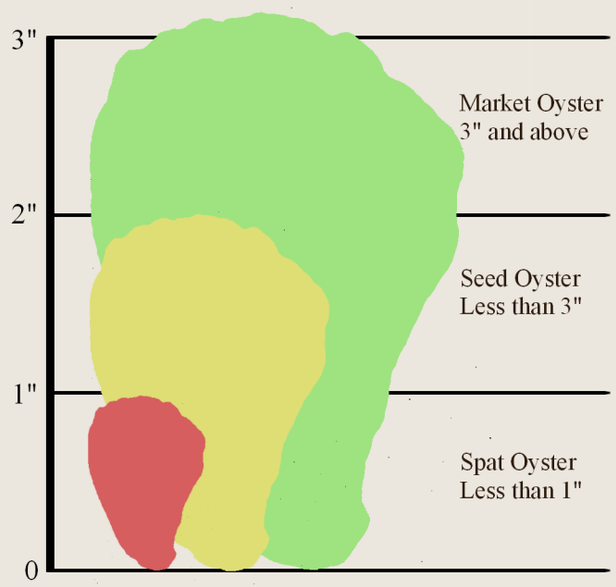
Diet

Oysters are filter feeders, meaning they use their gills to strain food from the water. Oysters' food selection is based on particle size rather than type. They feed mostly on planktonic organisms and decaying organic matter. Under optimal temperature and salinity conditions, an oyster can filter water at a rate of 15 liters per hour.

Age and Growth

Oyster larvae are barely visible to the eye when they settle, about the size of a pin-head. Once settled, they are referred to as spat. During the spat stage, shell growth is rapid and generally follows the shape of the surface upon which it is attached. Following the initial rapid growth phase, the young oyster's shell begins to thicken and its shape begins to resemble that of an adult. When an oyster reaches one inch in length, it is called a seed oyster. Seed oysters range from one inch to less than three inches in length, and once an oyster reaches three inches it is of market size (at approximately two years of age).

Identification



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Eastern Oyster Quick Facts

The maximum size of eastern oysters is approximately 12 inches long.

The maximum age of eastern oysters is thought to be as much as 30 years.

Louisiana is number one in commercial oyster production in the USA.

Over 11 million pounds of oysters were harvested in Louisiana in 2011.

The total annual economic impact of the commercial oyster industry is 317 million dollars, accounting for over 3,500 jobs.

Oyster Management

The Louisiana Department of Wildlife and Fisheries manages public oyster seed grounds to ensure sustainability of the resource. State biologists use various gear types to sample public oyster grounds and analyze data collected to determine overall health and abundance of the oyster resource. Cultch deposition, the planting of suitable hard substrate on water bottoms, is also part of the management plan. This provides free-swimming larvae a firm attachment site on which to settle and grow. Cultch deposition is carried out on public grounds using materials such as oyster shell, limestone, and crushed concrete. Harvest seasons are also set each year for the public oyster grounds, and additional management tools such as size restrictions and harvest limits may be utilized to further ensure resource sustainability.